REMARKS

The Examiner's acceptance of the drawings filed with the patent application on March 10, 2004, is noted with appreciation.

The Examiner's acknowledgment of the claim of foreign priority under 35 U.S.C. §119 and receipt of the certified copy of the priority document is also noted with appreciation.

The specification has been carefully reviewed and minor typographical and grammatical errors have been corrected by this amendment.

Claims 1 to 20 are pending in the application. By this amendment, claims 2, 5, 6, 14, 16, and 18 have been amended.

Claims 2, 5, 6, 14, 16, and 18 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. In making this rejection, the Examiner takes the position that "the original disclosure does not provide enough description for one to know what the 'unreceived or unused' wavelength is, and how the 'unreceived or unused' wavelength is decided". These claims relate to the first embodiment illustrated in Figure 2 of the drawings and described in detail on pages 8 to 14 of the specification. The amendments to claims 2, 4, 6, 14, 16, and 18 recite the wavelength classification as described in the specification. The wavelength classification uses a wavelength division multiplexing transmission system defined between the station apparatus 1 and each remote apparatus 2-1 to 2-n. Suppose that wavelengths a, b, c, and d in the wavelength classification are used by the transmission system. When a certain remote apparatus 2-m added to the system receives wavelengths a and b, it can be judged that other remote apparatuses are using wavelengths a and b. Furthermore, it can be judged that wavelengths c and d are not used by other remote apparatuses. Thus, "unreceived optical signal" means wavelengths c and d are not detected by the remote apparatus. Moreover, "unused wavelength" means wavelengths c an d which are not currently being used.

With the foregoing explanation and the amendments to claims 2, 5, 6, 14, 16, and 18, it is believed that the rejection of these claims under 35 U.S.C. §112, first paragraph, as been overcome, and withdrawal of the rejection is therefore

respectfully requested.

The disclosed and claimed invention is directed to a wavelength division multiplexing transmission system in which a plurality of remote apparatuses are connected to a station apparatus and transmission and reception are performed between the apparatuses, and a remote apparatus and a station apparatus used in the system, wherein the remote apparatus includes wavelength determining means for determining an available wavelength on the basis of an optical signal received from the station apparatus. There are two disclosed embodiments. In the first embodiment shown in Figure 2 and described on pages 8 to 14 of the specification, the wavelength determining means determines the wavelength of an unreceived optical signal as the available wavelength and set it as the transmission and reception wavelength to be used in the remote apparatus. In the second embodiment shown in Figure 3 and described on pages 14 to 16 of the specification, the wavelength determining means determines the wavelength of a received optical signal as the available wavelength and sets it as the transmission and reception wavelength to be used in the remote apparatus. The wavelength determining means may include wavelength separating means that sequentially separates optical signals having particular wavelengths from an optical signal including a plurality of wavelengths, optical reception means that outputs a reception status signal indicating whether or not a separated optical signal is being received, wavelength control means that identifies an unused wavelength on the basis of the reception status signal, sets the unused wavelength as the transmission and reception wavelength, and outputs a wavelength control signal for setting the wavelength, and optical transmission means whose output wavelength is adjusted to the unused wavelength according to the wavelength control signal. The station apparatus may include optical output control means that determines a wavelength to be used on the basis of an optical signal received from a remote apparatus.

The transmission system and its apparatuses according to the disclosed and claimed invention do not require a separate apparatus for detecting unused wavelength. Instead, a remote apparatus that actually performs communication autonomously detects an unused wavelength. Moreover, the transmission system and its apparatus are low-cost because only remote apparatuses require a

wavelength tunable filter and a wavelength tunable laser and the station apparatus does not require any wavelength tunable devices. Furthermore, the transmission system and its apparatuses do not have to transmit an extra signal for indicating a line is not in use.

The present invention eliminates the need for setting a given transmission wavelength beforehand because a remote apparatus autonomously determines an available wavelength based on an optical signal it has received from the station apparatus as described above.

Claims 1, 3, 4, 7 to 13, 15, 17, 19, and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over the admitted prior art (Figure 1 and the Background of the Invention) in view of U.S. Patent No. 5,956,166 to Ogata. This rejection is respectfully traversed for the reason that the combination of the admitted prior art of Figure 1 and Ogata neither show nor suggest the claimed invention.

As described above, in the claimed invention, a remote apparatus includes wavelength determining means that determines an available wavelength on the basis of an optical signal received from a station apparatus. Therefore, the need for resetting a wavelength to be used is eliminated and the need for maintenance tasks concerning wavelength is also eliminated.

In Figure 1 of the admitted prior art, a wavelength controller 204-1 to 204-n is connected only to an optical transmitter 203-1 to 203-n and not to an optical receivers 220-1 to 220-n. Ogata et al., on the other hand, do not disclose a wavelength controller that is connected the optical transmitter. Neither, the admitted prior art of Figure 1 nor Ogata et al. indicate that remote apparatuses comprise wavelength determining means that determine an available wavelength on the basis of an optical signal received from said station apparatus.

Claim 1 specifically recites that "each of said remote apparatuses comprises wavelength determining means that determines an available wavelength on the basis of an optical signal received from said station apparatus". In the first embodiment shown in Figure 2, when a remote apparatus 2-m is added in addition to the existing remote apparatuses, its optical transmitter 23-m does not output optical signals in the initial state. Its wavelength controller 24-m sends a

wavelength control signal 205-m to the wavelength filter 21-m to adjust the wavelength to be any of the wavelengths used in the system. The optical receiver 22-m can receive an optical signal 201-m of that wavelength separated. The wavelength controller 24-m receives from the optical receiver 24-m an optical reception status signal 204-m indicating whether an optical signal is being received and determines whether or not an optical signal with the corresponding wavelength is being received at the optical receiver 22-m. If the wavelength controller 24-m determined that such an optical signal is not being received, it sets the wavelength as the wavelength to be used in the remote apparatus 2-m. Based on this wavelength, the wavelength controller 24-m uses a wavelength control signal 206-m to adjust the wavelength of the optical transmitter 23-m and uses an optical output control signal 207-m to control the optical transmitter 23-m so as to provide an output. This causes the optical transmitter 23-m to start outputting an optical signal 202m of the wavelength. The wavelength controller 24-m outputs a wavelength control signal 205-m in order to separate the same wavelength as that is transmitted by the optical transmitter 23-m. If it is determined here that an optical signal with the set wavelength is being received, the wavelength controller 24-m adjusts the wavelength filter 21-m such that an optical signal with another wavelength is separated. The subsequent process is the same as described above. In this way, the wavelength controller 24-m changes the optical signal wavelength to be separated by the wavelength filter 21-m from one to another and makes determination as described above until an optical signal wavelength that the optical receiver 22-m does not receive is found. If such a wavelength is found, the wavelength is set as the wavelength used in the remote apparatus 2-m.

In the second embodiment shown in Figure 3, when a remote apparatus 2-m is added in addition to the existing remote apparatuses, its optical transmitter 23-m does not output optical signals in the initial state. Its wavelength controller 24-m sends a wavelength control signal 205-m to the wavelength filter 21-m to adjust the wavelength to be any of the wavelengths used in the system. The optical receiver 22-m can receive an optical signal 201-m of that separated wavelength. The wavelength controller 24-m receives from the optical receiver 22-m an optical reception status signal 204-m indicating whether an optical signal is being

received and determines whether or not an optical signal with the corresponding wavelength is being received at the optical receiver 22-m.

The claimed invention has the advantage that a remote apparatus can be readily attached because the remote apparatus can autonomously determine an available wavelength, set a transmission wavelength, and perform wavelength multiplexing communication with a station apparatus. The claimed invention has another advantage that when the wavelength to be used in remote apparatuses in a system must be changed because of a change to the system, each of the remote apparatuses can autonomously change its wavelength without the need for a maintenance person to make a change to each remote station.

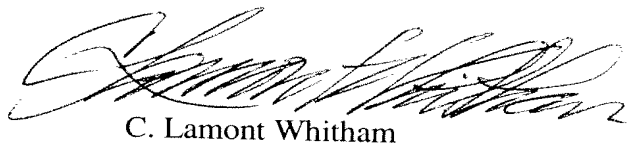
From the foregoing, it is clear that the Examiner has failed to make out a *prima facie* case for obviousness based on the prior art of Figure 1 and the patent to Ogata et al. These is simply no teaching that would support a conclusion of obviousness that "each of said remote apparatuses comprises wavelength determining means that determines an available wavelength on the basis of an optical signal received from said station apparatus".

In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1 to 20 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Respectfully submitted,



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